REMARKS

Applicants respectfully request reconsideration of the present case in view of the above amendments and the following remarks.

Claims 1-12 are currently pending. Claims 2, 3, 10 and 11 have been amended to correct minor informalities as suggested by the Examiner. No new matter has been inserted.

Objections

Claims 2, 3, 10, and 11 were objected to for informalities. In response, claims 2, 3, 10, and 11 have been amended as suggested by the Examiner. Applicants respectfully request that this objection be withdrawn.

35 U.S.C. § 102

Claims 1 and 5 were rejected under 35 U.S.C. § 102(e) as being anticipated by Hatano (6,091,460). Applicants respectfully traverse this rejection.

Claim 1 requires the step of "obtaining a predicted motion vector on the basis of motion vectors of blocks surrounding a block to be currently coded." Applicants assert that Hatano lacks this step and therefore does not anticipate claim 1.

For this step, the Examiner refers to Hatano at Fig. 11, element 3a, as producing a predicted image motion vector 110 from the motion vector of blocks being previously stored in memory 16. However, Hatano merely discloses that the motion vector search circuit 3a finds a block in the reference picture which minimizes the distortion and uses the block thus found as the prediction image (Col. 2, lines 51-63). Hatano does not disclose "obtaining a predicted motion vector on the basis of motion vectors of blocks surrounding a block to be currently coded" as required by claim 1.

Furthermore, the invention of claim 1, performs a motion estimation method on the basis of not only 1) a motion vector with a minimum motion compensated error, but also 2) a motion compensated error of a zero vector, and 3) a motion compensated error of a predicted motion vector, as reflected in steps c through g of claim 1. However, Hatano does not disclose the steps

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of c) - g). For steps c through g, the Examiner refers to col. 25, lines 35-62 and Fig. 11 stating that "note elements 7f and 7b are taken into consideration to compare values if the zero vector motion compensated error is not smaller than the threshold value, and the thus element 4c will output the final motion vector." However, Hatano only discloses that the comparing and selecting circuit 7f outputs a signal indicating NoMC (SEnomc≤SLEmc+K) mode or MC mode (SEnomc>SEmc+K), and that the selecting circuit 4c outputs the motion vector found by the motion vector search circuit at the MC mode, or outputs zero vector at the NoMC mode. Accordingly, Hatano does not disclose or suggest steps c through g of claim 1. Therefore, Hatano does not anticipate the invention of claim 1. Applicants respectfully request that this rejection be withdrawn.

Claim 5 requires "a motion vector selector for receiving said motion vector with the minimum motion compensated error, said minimum motion compensated error, said motion compensated error of said zero vector and said motion compensated error of said predicted motion vector from said motion vector searcher, said predicted motion vector from said motion vector predictor and first and second threshold values and then determining a final motion vector using the received information." For this element, the Examiner points to Fig. 11, element 4c as a motion vector selector, and then states that "in col. 25, ln. 35-62 and fig. 11, note elements 7f and 7b are taken into consideration to compare values if the zero vector motion compensated error is not smaller than the threshold value."

However, the motion vector selector of claim 5 receives 1) a "motion vector with the minimum motion compensated error", 2) a "motion compensated error of said zero vector", and 3) a "motion compensated error of said predicted motion vector." As described above, Hatano only discloses that the comparing and selecting circuit 7f outputs a signal indicating NoMC (SEnomc≤SLEmc+K) mode or MC mode (SEnomc>SEmc+K), and that the selecting circuit 4c outputs the motion vector found by the motion vector search circuit at the MC mode, or outputs zero vector at the NoMC mode. Accordingly, Hatano does not disclose or suggest a motion vector selector as required by claim 5. Therefore, Hatano does not anticipate the invention of claim 5. Applicants respectfully request that this rejection be withdrawn.

Claim 7 requires "a first comparator for comparing said motion compensated error of said zero vector from said first motion compensated error calculator with said first threshold value; a second comparator for comparing said motion compensated error of said predicted motion vector from said second motion compensated error calculator with said second threshold value." For these elements, the Examiner points to Fig. 11, elements 7e and 7f respectively. However, these elements are different from the first comparator and second comparator required by claim 7.

In the present invention, the first comparator compares a "motion compensated error of said zero vector" with a "first threshold value." In sharp contrast, element 7e of Hatano compares S1 (the distortion output from the motion vector search circuit 5a) with S2 (a second output from the priority vector reference circuit). In the present invention, the second comparator compares a "motion compensated error of said predicted motion vector" with a "second threshold value." In sharp contrast, element 7f of Hatano compares SEmc (the distortion output from the motion vector search circuit 5a) with SEnomc (a particular value of SEmc where the vector representing the relative position between the input image and the prediction image is zero) (see Col. 2, line 64 - Col. 3, lines 1-9). Accordingly, Hatano does not provide a first comparator and a second comparator as required by claim 7. Therefore, Hatano does not anticipate the invention of claim 7. Applicants respectfully request that this rejection be withdrawn.

35 U.S.C. § 103

Claims 2 and 10 were rejected under 35 U.S.C. 103(a) as unpatentable over Hatano (6,091,460) in view of Eifrig (6,005,980). Applicants respectfully traverse this rejection.

Hatano fails to anticipate claims 1 and 5 as described above. Eifrig fails to cure the deficiencies of Hatano. Specifically, Eifrig does not disclose or suggest steps c through g of claim 1. Nor does Eifrig disclose or suggest a motion vector selector as required by claim 5. Therefore, the combination of Hatano and Eifrig fails to render claims 1 and 5 obvious. As claim 2 is dependent on claim 1, and claim 10 is dependent on claim 5, they are also not rendered obvious. Applicants respectfully request that this rejection be withdrawn.

Furthermore, Applicants assert that there is no motivation to combine Hatano with Eifrig. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *See* MPEP § 2143.01; *In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990). The Examiner has provided no explanation whatsoever of the motivation supporting the combination of Hatano with Eifrig. Therefore, it is respectfully submitted that these two references are not properly combined.

Claims 3 and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano (6,091,460) in view of Sun (6,014,181). Applicants respectfully traverse this rejection.

Hatano fails to anticipate claims 1 and 5 as described above. Sun fails to cure the deficiencies of Hatano. Specifically, Sun does not disclose or suggest steps c through g of claim 1. Nor does Sun disclose or suggest a motion vector selector as required by claim 5. Therefore, the combination of Hatano and Sun fails to render claims 1 and 5 obvious. As claim 3 is dependent on claim 1, and claim 11 is dependent on claim 5, they are also not rendered obvious. Applicants respectfully request that this rejection be withdrawn.

Furthermore, Applicants assert that there is no motivation to combine Hatano with Sun. The Examiner has provided no explanation whatsoever of the motivation supporting the combination of Hatano with Sun. Therefore, it is respectfully submitted that these two references are not properly combined.
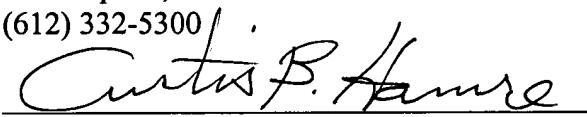
Summary

In view of the above amendments and remarks, Applicant respectfully requests a Notice of Allowance. If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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